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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,236	12/18/2001	Jing Zhao	200108	1602

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EXAMINER

PETKOVSEK, DANIEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,236

Applicant(s)

ZHAO ET AL.

Examiner

Daniel J Petkovsek

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 is/are allowed.
- 6) ☒ Claim(s) 13-14, and 16-22 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on March 22, 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on December 18, 2001, have been considered and made of record (note attached copy of forms PTO-1449).

Drawings

2. New corrected drawings are required in this application because the reference numbers must more clearly define which element is being referenced, for example an arrow should be drawn when a number of elements are referenced in the same figure in close proximity to each other (figures 2-8). The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because on line 3, "ports" should read "port". Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities: numerous minor informalities exist in the disclosure. A few examples include, on page 4, final line, "have drawbacks of slow, less reliable, and bulky" does not read clearly; on page 7, four lines from bottom, "coupling" should read "couple"; and on page 9, line 10, "angular" should read "angle". A number of other minor mistakes of grammar exist, and the review of the entire specification is necessary.

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Appropriate correction is required.

Claim Objections

5. Claim 14 is objected to because of the following informalities: "right angle prim" should read, "right angle prism". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 19 is rejected under 35 U.S.C. 112, 2nd paragraph, since it recites the limitation "said optical switch" in line 5 of the preamble. There is insufficient antecedent basis for this limitation in the claim, since no switch was previously described.

Inventorship

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 13-14, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al. U.S.P. No. 6,441,961.

Hou et al. U.S.P. No. 6,441,961 teaches (Figs. 2A-4B, column 4 line 22 through column 11 line 58) an optical reflection switch 300 for selectively switching light from a certain spectrum from a first input 301 to a first output 303, and from a first input 301 to a second output 305, the outputs located adjacently, the switch comprising: a block of birefringent material 302 for separating and combining orthogonal polarizations, a compound half waveplate 304, a polarization rotator 310 for rotating polarizations (at 45 or 90 degrees), and a sequence of polarization dependent beam path deflectors/prisms 330 for back reflecting the optical signals. Hou et al. '961 teaches (column 15 lines 1-10) that a filter may be coupled with the interleaver to narrow the passbands of the spectral response. Column 8 lines 60-65 teaches that deviation from the linear arrangement of these elements would be apparent to those skilled in the art, thus the exact arrangement of such is an obvious modification of Hou et al. '961.

Hou et al. '961 does not explicitly teach that the 1st and 2nd output ports use lenses to direct the optical signals into fibers, forming a dual collimator at the two outputs. Since it is well known in the art to use collimators/lenses to improve coupling to optical fibers, it would have been obvious at the time the invention was made to couple optical signals using lenses/collimators to the outputs for ensuring proper transmission of the signal. The input/output ports could obviously be coupled to well known optical fibers.

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Hou et al. '961 does not explicitly teach a polarization-independent beam angle corrector, however, keeping the angle of the beam in proper alignment is inherent to any optical wavelength switch since an error in the angle of the beam would negate the functionality of the switch. Compensating for any errors in the angle of the optical beams would have been inherently included in any optical switch such as the device of Hou et al. '961.

Regarding claim 14, the deflector is at a right angle. Regarding claim 18, see column 15 lines 12-23.

Allowable Subject Matter

11. Claims 1-12 are allowed. The relevant prior art does not teach or reasonably suggest the elements (and sequencing of such) as claimed. Although each component is well known in the art for use of maintaining polarization and wavelengths in optical switches, the prior art does not teach the specific arrangement and ordering of the components as such, and this ordering would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

12. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The relevant prior art does not teach or reasonably suggest a beam displacement prism between the first and second lenses to increase separation of such.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of polarization dependent optical switches to split signals into different spectra: PTO-892 form references X-Z.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (703) 305-6919. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 872-9321.



Daniel Petkovsek
June 11, 2003



Brian Healy
Primary Examiner